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base of caudal), all but one, on which the markings have been mostly lost, are readily referable by color, 7 (of 44 to 63 mm.) to *Apogon sellicauda*, Evermann & Marsh, 2 (of 53 to 56 mm.) to *Apogon maculatus*, 2 (of 40 to 47 mm.) to *Apogon binotatus*.

The first have black spot below soft dorsal and dark band across peduncle, the caudal sometimes with a narrow dusky tip. The second have black spot below soft dorsal and on peduncle, soft vertical as well as caudal fins with a narrow blackish tip. The third have dark band between dorsal and anal, and another across caudal peduncle—All have black spot on opercle.

It is impossible to find technical characters to correlate with these color differences. The anal soft rays vary from 8 to 9 in the *sellicauda*, in the *maculatus* are 9, in the *binotatus* 8 and 9. The scale counts vary from 25 to 27 in the *sellicauda*, *maculatus* (one specimen only) has 26, in *binotatus* both have 25. The *maculatus* are a trifle more slender, depth in length to base of caudal 2.9 1/2 and 3.1, versus 2.6 to 2.8 3/4 in the *sellicauda*, 2.7 2/3 and 2.8 4/7 in the *binotatus*.

If these three are in fact distinct species, and these few specimens representative, *maculatus* would be very slightly more slender and average a fraction of a ray more in the anal, *binotatus* average a scale less in the lateral line. But color is the only good criterion to differentiate them.

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TWO NEW INSULAR BATRACHOSEPS.

Upon examination of large series of *Batrachoseps* in various Museums it has become apparent that the forms inhabiting Santa Catalina Island and Coronados Islands are worthy of recognition.

Batrachoseps leucopus sp. n.

1914 *Batrachoseps attenuatus* Van Denburgh and Slevin, Proc. California Accd. Sci., (4), IV, p. 139.

Type: U. S. Nat. Mus. No. 64319, adult female, collected by A. W. Armstrong, Aug. 4, 1921.

Type locality: Los Coronados, North Island, Lower California.

Diagnosis: A *Batrachoseps* with dark dorsal surface and light sides, 18 to 20 costal grooves, hind leg extending forward over 4 costal folds, vomerine teeth in series of 8.

Description: Type; 20 costal grooves, 12 costal folds between appressed toes; head oval; head width $7 \frac{2}{3}$ in length from snout to vent; head length $5 \frac{1}{3}$ in length of body; eye longer than its distance from tip to snout; outline of upper jaw convex as seen from side; angle of jaw back of hind angle of eye; both eyelids fitting under a fold of skin behind; a groove from eye to gular fold; limbs weak; fingers 3, 2, 4, 1 in order of length, 1 not free from 2; toes 3, 2, 4, 1 in order of length, 1 not free from 2; tail longer than head and body, cylindrical in cross-section, scarcely tapering, ending in a blunt point; anal lips smooth; vomerine series not confluent with parasphenoids, 8 teeth in series, beginning behind inner border of nares, extending nearly straight back and a little in, separated from fellow by width of nares and from parasphenoids by same distance; latter in a single patch, divided behind, beginning opposite middle of eyesocket; blackish above, light whitish gray below postocular groove and a line above insertions of legs; tail dark on dorsal surface, sides and below light. Total length 101 mm., head 9, body 38, tail 54.

Remarks: While this animal is very close to *B. major* it has less brown in color; darker dorsum and lighter venter; a more distinct demarcation between color of upper and lower surfaces; vomerine teeth in a series instead of a patch and directed much more

backward. (*B. major* has the vomerine teeth in an irregular, nearly transverse patch.) Van Denburgh and Slevin (1914) mention 60 specimens, 55 of which were collected on East Coronado. Out of 38 specimens 36 had 18 costal grooves and 2 had 16.

Batrachoseps catalinae sp. n.

1905 *Batrachoseps attenuatus* Van Denburgh, Proc. Cal. Acad. Sci., (3), IV, p. 16; Van Denburgh and Slevin 1914, l. c., (4) IV, p. 137.

Type: U. S. Nat. Mus. No. 57335, adult female.

Type locality: Santa Catalina Island.

Diagnosis: A *Batrachoseps* with darker dorsal surface and lighter sides, 19 to 21 costal grooves, hind leg extending over 4 costal folds, vomerine teeth in irregular patch, first finger and toe very reduced.

Description: Type; 21 costal grooves; 12 costal folds between appressed toes; head oval; head width $7 \frac{1}{4}$ in length from snout to vent; head length $4 \frac{1}{3}$ in length of body; eye longer than its distance from tip of snout; outline of upper jaw concave as seen from side; angle of jaw back of hind angle of eye; both eyelids fitting under a fold of skin behind; a groove from eye to gular fold; limbs weak; fingers 3, 2, 4, 1 in order of length, 1 fused to 2, scarcely distinguishable; toes 3, 2, 4, 1 in order of length, 1 fused to 2, scarcely distinguishable; tail longer than head and body, cylindrical in cross-section, tapering to a point; Vomerine teeth in two patches, beginning behind inner border of nares, extending in and back, separated from fellow by width of nares, and from parasphenoids by twice that distance; latter in two patches incompletely separated, beginning opposite middle of eyesocket; dark purplish above, fading gradually into dull brownish below; no distinct line of demarcation. Total length, 121 mm., head 10, body 43, tail 68.

Variations: Four specimens show no important variations. In U. S. Nat. Mus. Nos. 57334, 57336,

38362 the vomerine series are separated from the parasphenoids by a greater distance than in the type, namely by the length of the vomerine patch. Also in these three specimens the parasphenoids are in two quite separate patches.

	Total length	head	body	tail	sex
57334	97	9	38	50	female
57336	80	7.5	28.5	44	young
38361	103	8	35	60	young
38362	96	7.5	33.5	55	young

Remarks: This species is close to *B. major*, the coloration is quite similar, but the small size of the animal, the reduced first finger and first toe, and the larger number of costal grooves are sufficient to indicate a recognizable form.

Van Denburgh (1905) says; "A single specimen collected at Avalon, Santa Catalina Island, by Mr. A. M. Drake (Cal. Acad. Sci. No. 3726) seems indistinguishable from the mainland species. It has nineteen costal grooves, slender limbs, and narrow head. The coloration is uniform slaty brown above, paler below. Three specimens secured on this island by Mr. Fuchs differ from this one only in the slightly paler coloration."

Neither of these species are at all similar in color to *B. attenuatus*, which has a light dorsal band and dark sides, thus quite reversing the color scheme of *major*, *leucopus*, and *catalinae*.

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HERPETOLOGICAL NOTES FROM NORTH CAROLINA—II.

Plethodon cinereus, taken in some numbers about twelve miles from Raleigh, on a high steep slope on the south side of Crabtree Creek, overgrown with